

out of the Glass pass through a small round hole, or aperture made in a little Plate of Lead, Brass, or Silver, where with the Glass is to be covered, which hole must be no bigger than is necessary for light enough to pass through. For so it will render the Object distinct, the Plate in which 'tis made intercepting all the erroneous part of the Light which comes from the Verges of the Speculum AB. Such an Instrument well made if it be 6 Foot long, (reckoning the length from the Speculum to the Prism, and thence to the Focus T) will bear an aperture of 6 Inches at the Speculum, and magnify between two and three hundred times. But the hole H here limits the aperture with more advantage, then if the aperture was placed at the Speculum. If the Instrument be made longer or shorter, the aperture must be in proportion as the Cube of the square Root of the length, and the magnifying as the aperture. But its convenient that the Speculum be an Inch or two broader than the aperture at the least, and that the Glass of the Speculum be thick, that it bend not in the working. The Prism EFG must be no bigger than is necessary, and its back side FG must not be quick-silvered over. For without quick-silver it will reflect all the Light incident on it from the Speculum.

In this Instrument the Object will be inverted, but may be erected by making the square sides EF and EG of the Prism EFG not plane but spherically convex, that the Rays may cross as well before they come at it as afterwards between it and the Eye-Glass. If it be desired that the Instrument bear a larger aperture, that may be also done by composing the Speculum of two Glasses with Water between them.

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Fig 1.

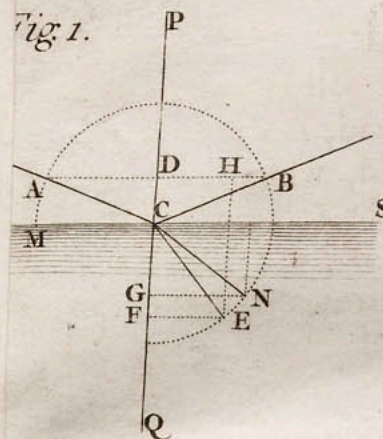


Fig 2.

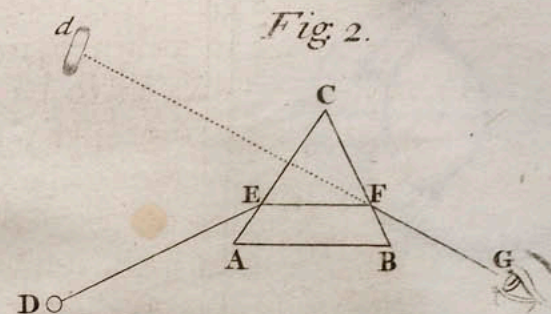


Fig 3.

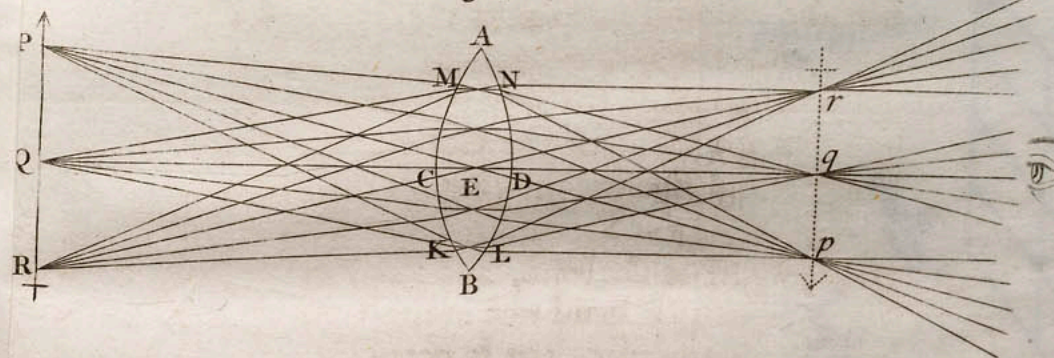


Fig 4.

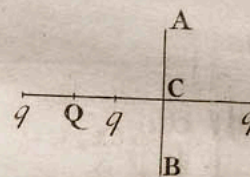


Fig 5.

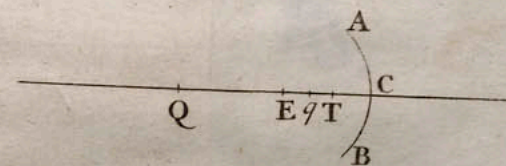


Fig 6.

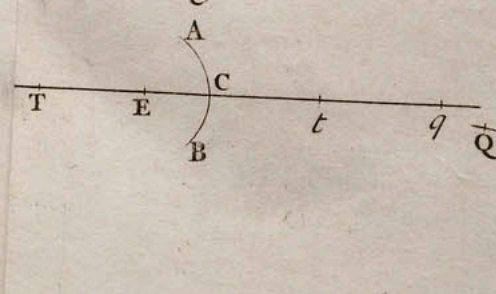


Fig 7.

